Increasing the Number of Baccalaureate Degree Holders Through Collaboration between the Wisconsin Technical College and the University of Wisconsin Systems

A Convergence of Events Leads to Three Models:

Several external events have converged to create the opportunity to increase the number of baccalaureate graduates living in Wisconsin who have graduated from, or are enrolled in, the Wisconsin Technical Colleges' Associate Degree programs. The WTCS is the primary provider of higher education to adults (25 or older) in Wisconsin. For the academic year 2002-2003, 66,470 adults were enrolled in Associate Degree programs in the WTCS compared to 18,870 adults enrolled in any degree program in the UW System. With almost three and one half times the number of enrolled adults as the UW System, the WTCS provides the most likely pool of adult students interested in obtaining higher education. Together with students less than 25 years of age, the WTCS enrolled 121,497 students in Associate Degree programs, only 17,626 less than the UW System has enrolled in all degree programs[1]. The WTCS provides the most likely overall pool of students interested in completing a Baccalaureate Degree.

WTCS students have demonstrated a desire to attain the Baccalaureate Degree through their rate of transfer into the UW System. Despite the barriers and lack of ability to transfer many courses from the technical college to the UW institution, the number of transfers has increased from 2,177 in academic year 1998-99 to 2,626 in year 2002-03[2]. In fact, in 2002-03 WTCS students comprised a higher percentage of transfers into the UW System than the UW colleges (19.8% vs. 16.6%)[3].

The WTCS has developed an infrastructure that attracts and supports adult students as well as those who must work while in college. These students are often place bound, have family responsibilities, are low income, and/or are first generation college students. The WTCS sixteen technical colleges comprising 47 campuses and numerous learning centers provide access to education where the student lives. Further, through an extensive Interactive Television Network (ITV) and the aggressive development of on-line offerings through eTech College, the WTCS has put higher education within reach of every Wisconsin resident. The student service, library resource, financial aid, billing, registration, and degree audit systems have been modified to meet the student's needs anywhere, anytime, and in anyway.

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[1] Total Headcount by Institution by Age and Classification, 2002-03, Student Statistics Reports, Office of Policy Analysis and Research, University Wisconsin System Administration, Madison: Special Tabulation, Program Enrollment by Age 2002-03, Client Reporting System, Wisconsin Technical College System Office, State of Wisconsin: Madison, June 2, 2004.

[2] *Transfers from the Wisconsin Technical Colleges to the University of Wisconsin System, October 2003,* Report to the Joint Administrative Committee on Academic Programs, Office of Policy Analysis and Research, University of Wisconsin System Administrative: Madison.

[3] Ibid.

The nature and content of the material learned by the student within the WTCS has become academically more rigorous in response to the increased technical demands of the work place. The constant changing demands of new technology and the reallocation of work in the pursuit of increasing productivity have further fueled this push for rigor. As a result, students enrolled in Associate Degree programs, Applied or otherwise, are often taking the equivalent of freshman/sophomore level social science, communication, math and calculus, and science courses as they pursue their degree. It is little wonder, then, that these students expect to receive credit for these courses when and, if they wish, to continue their education.

The UW Board of Regents recognized this dynamic when it voted to allow thirty credits of general education (including math and science) to be transferred from a technical college to a UW institution. This, along with the increased effort to create seamless transfer for specific programs such as nursing, has created the opportunity to expand the number of students pursuing a Baccalaureate subsequent to obtaining the Associate Degree.

These external events have created the opportunity to pursue at least three different models in higher education that will result in more Wisconsin residents obtaining the Baccalaureate Degree. They are as follows:

- Collaborative One Plus One And One Plus Three Options
- Applied Bachelor's Degree
- Occupational Associate of Science Degree

The balance of this proposal will delineate the concepts within each model.

Collaborative One Plus One and One Plus Three Options

Description of Model:
This model takes advantage of the rigor of the general education courses in the WTCS Associate Degree programs and the action by the UW Board of Regents to accept 30 credits of general education. Options for seamless transfer would be created with the 2-year UW colleges through an arrangement where one year of general education from the WTCS colleges would be matched with one year of additional education from the UW colleges. This would allow the student to obtain a jointly granted Associate Degree that would directly transfer into a UW university at the junior level. Simultaneous to the development and offering of this option would be the development of a One Plus Three Option. In this situation, a WTCS college student could transfer one year of general education credits into any state university and begin as a sophomore. In the one plus one and the one plus three models, students could exercise this option at any time, before or after obtaining a degree from the technical colleges

Goals and Outcomes of Model:
A modest goal would be to increase the number of students transferring from WTCS colleges into UW Baccalaureate Degree tracks within the next 3 years by 50% (from 2,626 to 3,939).

Evidence of Model's Success, if Available:
Such a model will take advantage of the high number of adults pursuing degrees in the WTCS. Further, it allows students that are place bound to complete more of the Baccalaureate Degree in their community. Without formally creating this transfer option, the WTCS has more students transferring into the UW than any other Associate Degree granting system. Making this transition easier and more available will serve only to increase the numbers transferring.

Challenges to Model's Success, if Known:
The challenge to this model's success rests with the willingness of the UW and the WTCS to respect each other as full partners in the delivery of higher education. Historically perceived and actual differences in mission have created a culture in higher education that misunderstands the rigor of today's technical programs and undervalues the education received by technical college students. Engaging faculty in both systems in the creation of the One Plus One and the One Plus Three Option can best overcome this barrier. Leadership of the collaborating institutions must be persistent in insisting that these options be created. Further, the leadership must ensure that Baccalaureate Degrees resulting from the collaboration are as equally valued as all other Baccalaureate Degrees.

Ways in which Model Relates to Low Income, Minority, and/or Non-Traditional Students:
Nationwide, two-year colleges have historically had a greater incidence of minority, first generation college attendees, low-income student, and/or non-traditional enrollment than Baccalaureate granting institutions. Such is the same in the WTCS. It has already been shown that the number of adults attending the WTCS is far greater than the UW System. Thirty-one percent (31%) of the transfer students from the WTCS were adults, compared to 16% of the non-WTCS transfer students[4]. Thirteen percent (13%) of WTCS enrollment is from minority populations[5]. The transfer cohort from the WTCS has a greater percentage of minority students than the non-WTCS transfer cohort[6]. The increased transfer options to WTCS students will undoubtedly increase the number of low income, minority, and/or non-traditional students in the UW System.

Describe the Partners and Their Role(s) in Collaborating on this Model:
The Northeast Wisconsin Educational Resource Association (NEWERA) (comprised of Fox Valley, Lakeshore, Moraine Park, and Northeast Wisconsin Technical Colleges; UW Colleges at Fond du Lac, Sheboygan, Manitowoc, Fox Valley, and Marinette; College of Menominee Nation; and UW-Green Bay and UW-Oshkosh) has already begun to model the collaboration that would need to occur for this model to succeed. In fact, the leaders of these institutions have tasked their respective staff to develop the One Plus One and One

[4] *Transfers from the Wisconsin Technical Colleges to the University of Wisconsin System, October 2003,* Report to the Joint Administrative Committee on Academic Programs, Office of Policy Analysis and Research, University of Wisconsin System Administrative: Madison.
[5] WTCS Facts March 2004
[6] *Transfers from the Wisconsin Technical Colleges to the University of Wisconsin System, October 2003,* Report to the Joint Administrative Committee on Academic Programs, Office of Policy Analysis and Research, University of Wisconsin System Administrative: Madison.

Plus Three Model. Action by the UW/WTCS Committee to Expand Baccalaureate Degree Holders in Wisconsin in support of this model will serve to endorse and hasten this work.

Cost/Benefit Analysis or Projection of Cost/Benefit:
Several cost benefits will accrue from the implementation of this model. The existing adult infrastructure with the WTCS colleges will not be recreated in the UW System. No new courses will be created where they already exist within the WTCS. No new space or infrastructure will be created where there is existing capacity within the technical colleges. Enrollment in upper division courses within the UW System that typically run with lower levels of students will be increased, thereby reducing the cost of instruction per student.

Bachelor of Applied Science Degree

Description of Model:
The Bachelor of Applied Science Degree (B.A.S.) will provide opportunities for individuals who have completed Associated of Applied Science Degree programs. The degree provides additional educational preparation and career advancement opportunities.

The B.A.S. is structured on the "inverted major" concept, which builds complimentary academic degree programs around the technical or occupational major the student has already completed. While traditionally the inverted major is a 2+2 model, it is possible to also create a dual enrollment option where students freely take courses from both the technical college and university simultaneously.

Goals and Outcomes of Model:
Within three years 800 or more students may have achieved a Bachelor's Degree through this model.

Ways in Which Model will Increase Baccalaureate Degree Participation and Expansion:
The Bachelor of Applied Science is offered for students completing an Associate of Applied Science (A.A.S.) Degree and is specifically designed to allow students to enter into a Bachelor Degree program without experiencing credit loss or duplication of courses.

Wisconsin ranks 9th nationally in terms of the percentage of the labor force who have completed an Associate Degree, but only 30th in the percentage who have earned a Bachelor's Degree. Thus, Wisconsin will be accessing one of largest untapped markets in the state. In fact, these potential students have already demonstrated their desire for higher education and have "proven" themselves as capable students. Accessing this population should yield higher completion rates than your traditional entering freshman class.

Evidence of Model's Success, if Available:

The "inverted major" or "upside down" degree is not a new concept in higher education in the United States. Several states including Michigan, Montana, Missouri, Indiana, Arizona, and Pennsylvania have similar models in place benefiting students who desire transfers.

Challenges to Model's Success, if Known:
The upside down degree may be troubling for some, as it blurs the lines between upper and lower division courses. Students in this type of degree program take much of their content major at the two-year college and the bulk of their general education courses at a four-year university.

The technical or occupational major does not solely rest on the foundation of general education, but rather higher level general education and program content overlays the major. The scope and sequence of coursework may vary from the traditional four-year sequence.

There may be some difficulty in aligning some A.A.S. Degree programs with corresponding B.A.S. Degree programs. This can largely be addressed by developing the B.A.S. in response to the existing A.A.S. content instead of the reverse.

Finally, care will have to be taken to ensure that recipients of Bachelor's of Applied Science will not be viewed as having received a lesser quality Bachelor's Degree than those who have obtained a Bachelor's Degree through a more traditional model.

Ways in Which Model Relates to Low Income, Minority, and/or Non-Traditional Students:
This model is attractive to all students because it provides a path to a Bachelor's Degree without adding additional costs due to loss of credit or duplication of courses. The working adult population will gain from improved mid-career changes and skills enhancement. As stated in the previous model, technical colleges enroll a higher level of minority and low-income populations. As the number of transfer students between two-year colleges and four-year universities improves, so too will the numbers of these students increase.

Describe the Partners and Their Role(s) in Collaborating on this Model:
Leadership of the University of Wisconsin System (UWS) and the Wisconsin Technical College System (WTCS) must be willing to examine and align curriculum to facilitate this transfer arrangement. The University of Wisconsin-Stout has a successful history of working with the WTCS to create seamless transfer of students desiring to transition to a Bachelor's Degree and may serve as a model for consideration.

Several elements of the current UWS/WTCS Six-Part Plan for enhancing credit transfer and expanding the number of Baccalaureate Degree holders in Wisconsin also describe and reinforce partner roles in collaborating on this model.

Cost/Benefit Analysis or Projection of Cost/Benefit:
This model will provide additional access for advanced degree completion for students who possess an Associate of Applied Science Degree. The B.A.S. Degree programs will capture the agility and responsiveness of the WTCS to enhance and develop careers in response to changes in technology and workplace conditions. Likewise, the offering of the B.A.S. by all UW four-year institutions will allow each institution to expand into fields previously too cost prohibitive. For example, UWGB could begin to offer more programming in professional technical fields without having to make the huge capital

investment in labs as well as incur the cost of more faculties to support a four-year program.

Any reduction in the number of duplicative credits students need to take saves the student money and increases his/her incentive to complete a Baccalaureate Degree. This model will increase the number of state residents with four-year degrees at a lower cost for both the student and the state and, therefore, local taxpayers.

Occupational/Pre-major Associate of Science Degree

Description of Model:
Many states use the Associate of Science Degree with an occupational focus as a method of bridging the gap between the Associate of Applied Science Degree and the Liberal Arts Associate of Science or Arts Degrees. These degrees are frequently referred to as *Pre-Major* or *Major-Specific Associate Degrees*. For the purposes of this description, they will be referred to as Occupational/Pre-Major Associate Degrees, to emphasize the distinction between the existing Liberal Arts Associate Degrees in Wisconsin higher education.

The Occupational/Pre-Major Associate of Science (OAS) Degree is a transfer degree that typically includes 18 credits of occupational coursework to accompany the general studies coursework. The Associate of Science is a universally recognized transfer degree; therefore, all credits are at the transfer level. The (OAS) Degree offers the opportunity to expand transferability options, and yet may allow some students to use the credential to seek employment. The following is some descriptive information and examples of OAS Degrees, taken from the website from Moraine Valley Community College in Illinois:

Associate in Science Degree (A.S.)
Programs are for students who plan to major in science disciplines such as biology, chemistry, chiropractic and osteopathy, dentistry, engineering, geology, mathematics, medicine, medical technology, naprapathy, nursing, pharmacy, occupational and physical therapy, physics, and veterinary medicine. It is also for transfer business majors such as accounting, business administration, finance, human resources, marketing, and management. The transfer program consists of 62 credit hours: 38 credit hours of general education and 24 credit hours of additional degree requirements/electives.

Illinois Articulation Initiative
Moraine Valley Community College is a participant in the Illinois Articulation Initiative (IAI), a statewide agreement that allows transfer of the completed Illinois transferable General Education Core Curriculum between participating colleges and universities. Completion of the General Education Core Curriculum assures transferring students that lower-division general education requirements for an associate's or bachelor's degree have been satisfied. Contact the Academic Advising Center for additional information and read about the IAI on the World Wide Web.

Business A.S.—This program is designed for students pursuing a baccalaureate degree in the areas of accounting, finance, management, or marketing.

Computer Science (Information Systems Emphasis) A.S.—Computer science majors encompass either a business and information systems emphasis or mathematics emphasis. The

information systems emphasis focuses on the use of computer technology and information management methods to solve business problems.

Computer Science (Technical Emphasis) A.S.—Computer science majors encompass either a business and information systems emphasis or mathematics emphasis. The technical emphasis focuses on algorithms, theoretical foundations of computer science and development of software.

Engineering A.S.—The engineer is concerned with the application of scientific principles to practical problems.

Manufacturing Technology/Machining A.S.—Manufacturing Technology is a combination of math and science education with hands-on skills. It is a field that specializes in the application of manufacturing concepts, principles and processes to plan, design and manage machines and people.

Nursing A.S.—R.N.s are licensed upon passing the state licensure exam. They may supervise, teach and delegate responsibilities; deliver direct patient care; prepare patients for surgery; establish patient care plans; and more.

In some other states, the program of study is generalized into two or three tracks and the additional courses (pre-requisites and occupational courses) are treated as electives at the two-year level. Arizona, for example, defines three pre-major degrees: (i) Liberal Arts, Social Sciences, Fine Arts, Public Programs, and Communication; (ii) Business; (iii) Physical and Biological Sciences. Others have specific programs for pre-engineering or pre-biological science.

States with specific pre-major programs include:

- Colorado
- Florida
- Illinois
- Iowa
- Massachusetts
- Maryland
- Michigan
- Minnesota
- New Mexico
- North Carolina
- Pennsylvania
- Texas
- Virginia
- Washington

In these states, students from 2-year institutions can complete a pre-major program and are typically accorded junior status on entry to a senior institution. These states typically have an agreed upon common general education core or agreement that, if the sending institution's core is met, the senior institution will accept that most, if not all, of its own core has been met. Exceptions include foreign language, physical education, writing across the curriculum, or other institution-wide upper division general education requirements that a senior institution may have.

Goals and Outcomes of Model:
The OAS model proposes that the Wisconsin Technical College System has expanded authority to approve transfer degrees in occupational areas. The specific goals will include:

- Increasing the number of students who transfer into Baccalaureate programs. A reasonable target would be to confer at least 500 OAS degrees within five years**.**

- Providing increased flexibility for the attainment of multi-disciplinary skills for OAS graduates who transfer to complete a Baccalaureate Degree.

- Establishing a degree model that aligns with emerging occupations (such as nanotechnology) that inherently requires a path toward a Bachelor's Degree.

Ways in Which Model will Increase Baccalaureate Degree Participation and Expansion:
The OAS Model will provide significantly increased opportunities for transfer to the University of Wisconsin System and the private colleges in Wisconsin. The model will be particularly attractive to working adults due to the dual focus (transferability and an occupational focus). The OAS Model will also provide better alignment with companion programs at universities. It replicates a more typical curricular path for students, since students will take some introductory occupational coursework in their first two years of college. The implementation of the OAS Model is an affordable strategy since much of the coursework will be drawn from existing curriculum.

Evidence of Model's Success, if Available:
In Illinois, in the 2001-02 year, there were 7,711 Associate of Arts Degrees conferred, 4,068 Associate of Science Degrees, and 831 Associate of Arts and Science Degrees. This has resulted in a total of 12,610 transfer degrees conferred in 2002. Meanwhile, in Wisconsin during the same year, the University of Wisconsin Colleges conferred 1,109 Associate of Arts and Sciences Degrees. Wisconsin ranks well in Associate of Applied Science Degrees awarded (for example, the WTCS conferred 7,403 AAS degrees in 2002). However, the Wisconsin Technical College System only conferred a combined total of 215 Associate of Arts and Associate of Science Degrees. The Wisconsin total for transfer degrees conferred is 1,324. Illinois confers nearly ten times the number of transfer degrees in their public two-year colleges.

Challenges to Model's Success, if Known:
One challenge to the implementation of the model will be incorporating this concept into the Wisconsin Higher Education System. The Occupational Associate of Science Degree fills a gap that exists in this state between the Associate of Applied Science and the Liberal Arts Degree. While other states have been successful in establishing a spectrum of associate degree opportunities, collaborative planning involving all elements of the Wisconsin Higher Education System should be involved in bridging the gap.

Ways in Which Model Relates to Low Income, Minority, and/or Non-Traditional Students:
The OAS Model will be attractive to low income, minority and non-traditional students because it expands transfer opportunities within the WTCS…where these target groups

have a history of service in Wisconsin. The affordable tuition, coupled with the multi-disciplinary nature of the degree will add to this match. This model, for the most part, will be particularly conducive to distance learning delivery, and thus attractive to working adults.

Describe the Partners and their Role(s) in Collaborating on this Model:
The success of this model will be tied to the collaborative planning between the WTCS, UW System and private colleges. The planning should include:

- Targeting occupational areas in demand and in emerging areas.
- Building connections between two-year and four-year campuses to ensure a strong alignment in curriculum.
- Establishing outcomes and piloting implementation success.

Cost/Benefit Analysis or Projection of Cost/Benefit:
The OAS Model will utilize cost-effective strategies to increase participation rates at the Baccalaureate level. It will use an existing network of access points through the various WTCS campuses. And the degree will be built upon, largely, with existing general studies and occupational coursework. Support systems (such as counseling, library support, and facilities) are also, in large part, either available, or can be made available through locally funded expansion.

The Case for Adoption of the Three Models

Adjusting for population size, it is evident that Minnesota's transfer rate from two-year colleges to four-year colleges is 76% higher than Wisconsin's[7]. With the WTCS Associate Degree enrollment of almost 120,000 and over half of those 25 years of age or older, it seems obviously prudent to tap into this potential market of Baccalaureate students, who are being underserved in this state compared to Minnesota. The three proposed models would allow for the expansion of Baccalaureate Degree holders utilizing existing infrastructure, course offerings, and adult access delivery systems. This cost effective approach will allow the UW System to take advantage of its strengths in offering upper division courses and professional programs while utilizing the strength of the WTCS in providing rigorous lower division general education and technical program content through a diffuse set of delivery methods in a wide array of geographical locations. These models are consistent with the current mission of the Wisconsin Technical College System to provide highly skilled technicians for the workforce of today and tomorrow. In no way will this detract from our continued focus on providing career-oriented education and ensuring that people of all abilities have access to higher education.

It is projected that adoption of these three models will, at the least, allow Wisconsin to match the percentage of transfers experienced in Minnesota. A conservative estimate of the number of transfers would a doubling the existing number within the first three years,

[7] *Expanding Access to the Baccalaureate Degree in Wisconsin*, by Dr. Frank Goldberg, Associate Vice-President, Office of Policy Analysis and Research, UW System; and, Dr. Janet Washbon, Assistant Vice-President, Office of Policy and Government Relations, WTCS.

from 2,626 to 5,252. With 94% of the reporting technical college graduates living and working in Wisconsin, it is highly probable that these students will continue to live in Wisconsin after completing their Baccalaureate Degree[8].

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[8] Wisconsin Technical Colleges 2002-2003 Graduate Follow-up Report